38. (Amended) A capacitor comprising a pair of capacitor electrodes having capacitor dielectric material therebetween comprising a composite of two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric composition selected from the group consisting of a barium strontium titanate, a strontium titanate, a strontium bismuth titanate, a lead lanthanate zirconia titanate, Ta_2O_5, and mixtures thereof, both of the discrete layers being crystalline, and comprising an interface where the discrete layers contact which is characterized by a perceptible change in crystallinity from one layer to the other, the perceptible change in crystallinity being characterized by a perceptible interface line between the two discrete layers and a perceptible lateral shift in grain boundaries from the one layer to the other.

42. The capacitor of claim 38 wherein the same capacitor dielectric material comprises a titanate compound.

43. The capacitor of claim 38 wherein the same capacitor dielectric material comprises Ta_2O_5.

46. The capacitor of claim 38 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

47. The capacitor of claim 42 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

D1

48. The capacitor of claim 43 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

49. The capacitor of claim 38 wherein at least one of the electrodes predominately comprises a material selected from the group consisting of TiN_x, WN_x, TaN_x, $PtRh_x$, $PtRu_x$, $PtIr_x$, and mixtures thereof.

50. The capacitor of claim 49 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

51. The capacitor of claim 38 wherein one of the two layers has a thickness of from 10% to 90% of a combined thickness of the two layers.

52. The capacitor of claim 51 constituting an entire capacitor dielectric region between the pair of capacitor electrodes, the entire capacitor dielectric region consisting essentially of the composite of the two immediately juxtaposed and contacting, yet discrete, layers of the same capacitor dielectric material.

53. The capacitor of claim 51 wherein at least one of the electrodes predominately comprises a material selected from the group consisting of TiN_x, WN_x, TaN_x, $PtRh_x$, $PtRu_x$, $PtIr_x$, and mixtures thereof.

55. (New) A capacitor formed by a process comprising:

forming a first capacitor electrode;

depositing a layer comprising a dielectric material over the first electrode;

annealing the layer to form a first polycrystalline layer having a polycrystalline structure with grain boundaries; and

after the annealing, forming a second polycrystalline layer comprising the dielectric material over and contacting the first polycrystalline layer, the second polycrystalline layer having the polycrystalline structure with grain boundaries, the first and second polycrystalline layers having a perceptible interface line therebetween characterized by a perceptible lateral shift in the grain boundaries of the second polycrystalline layer relative to the grain boundaries of the first polycrystalline layer.